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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/738,372	12/15/2000	Min Jiang	IMRAA.013DV1	1781

20995 7590 09/11/2003

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EXAMINER

ZAHN, JEFFREY N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Applicati n N .

09/738,372

Applicant(s)

JIANG ET AL.

Examiner

Jeffrey N Zahn

Art Unit

2828

--Th MAILING DATE of this communicati n appears on the cover sheet with the corresp ndence address --

THE REPLY FILED 15 August 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.  
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.  
2. ☐ The proposed amendment(s) will not be entered because:  
(a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ they raise the issue of new matter (see Note below);  
(c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.  
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.  
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 22-28,33,34 and 57-64.

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The proposed drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.  
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.  
10. ☒ Other: See Continuation Sheet

*Hy Zahn* 9/3/2003

*Paul JP*  
*SPB 2828*

Continuation of 5. does NOT place the application in condition for allowance because: Claims 22-28, 33,34 and 57-64 remained rejected for the reasons discussed below and in Paper No. 17, Office Action.

Continuation of 10. Claims 22-28, 33-34 and 57-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: (1) pumping a gain medium within a resonant Fabry-Perot laser cavity; (2) generating Q-switched mode-locked laser pulses using a saturable absorber located within said resonant Fabry-Perot optical cavity; (3) absorbing said Q-switched laser pulses by insertion of a Two-Photon Absorber within the said resonant Fabry-Perot optical cavity; and (4) outputting a cw mode-locked laser pulse from the said resonant Fabry-Perot optical cavity.

These steps are essential because they are (1) necessary to generate a cw mode-locked laser pulses as disclosed by the applicant and (2) these steps are not obvious to someone of skill in the art of lasers, as related to claim interpretation, without reference to the specification. Because the claims lack the specified steps, they are indefinite.

In addition, it is unclear from the claim language how a cw mode-locked laser pulse is generated with the claimed steps. Specifically, what function the steps have as related to the generation of the cw mode-locked laser pulses.

Regarding Claim 23, it is unclear from the claim language what is being claimed, i.e. how the claimed invention is q-switched and q-switched suppressed.

Regarding Claim 34, in addition to the discussion above, Claim 34 specifies an "and" without any further recital of steps. Accordingly, this claim is indefinite.

Claims 22-24, 26-28, 33-34, 57-59 and 61-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Wayne et al. (US 4176327). Regarding Claims 22, 28, 33, 34, 57, and 63-64, Wayne et al. discloses a method of generating laser pulses comprising generating Q-switched mode-locked laser pulses (col. 4, line 66 – col. 5, line 27; see also abstract) and suppressing q-switching (col. 6, lines 28-50; see also abstract). In addition, the method disclosed by Wayne et al. is a method of generating laser pulses in a continuous wave mode locked fashion (abstract); however, this limitation of the claimed invention is not given patentable weight because the body of the claim does not support a cw mode-locked laser pulse, i.e., there is no claimed step to manipulate any structural feature of the invention to generate a cw mode-locked laser pulse.

Regarding Claim 23, 24, 57, 58 and 59 Wayne et al. discloses a method that includes absorption of q-switched laser pulses within their laser cavity (col. 5, line 47- col. 6, line 27).

Regarding Claim 26, 27, 61 and 62 Wayne et al. discloses a method that includes pumping a gain medium (24) with a laser cavity (Fig. 1) and absorbing optical radiation from said gain medium in a Fabry-Perot structure (Fig. 1; see also col. 4, line 65- col. 5, line 46) that resonates.

Claim 25 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wayne et al. in view of Hordvik (Pulse Stretching Utilizing Two-Photon-Induced Light Absorption, IEEE Journal of Quantum Electronics, April 1970).

Regarding Claim 25 and 60, Wayne et al. lacks the step of suppressing Q-switching comprising two-photon absorption. Hordvik teaches the use of Two-Photon Absorption to suppress Q-switching as a means to enable pulse stretching (Abstract; see also col. 1, 2nd para. of Introduction). It would have been obvious at the time of the invention to someone of ordinary skill in the art of lasers to modify Wayne et al. to include absorbing Q-switched laser pulses using a Two-Photon Absorber to lengthen the pulses. It is well known in the art of lasers that increasing the pulse length of a laser pulse is valuable for many laser applications that involve increased peak power.

The Applicant is reminded that 37C.F.R. 1.56 requires the Applicant to disclose to the USPTO information material to patentability of the pending claims. As cited in the attached PTO-892, IMRA and/or an Applicant(s) have published patent related disclosures related to the claimed invention. In addition, the attached PTO-892 cites other relevant published patents related to the pending claims. .